



## King's Research Portal

### *Document Version*

Publisher's PDF, also known as Version of record

[Link to publication record in King's Research Portal](#)

### *Citation for published version (APA):*

Hussein, S. (2010). Adult day care workforce in England. *Social Care Workforce Periodical*, (4).  
<http://www.kcl.ac.uk/sspp/policy-institute/scwru/pubs/periodical/2010/issue4.aspx>

### **Citing this paper**

Please note that where the full-text provided on King's Research Portal is the Author Accepted Manuscript or Post-Print version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version for pagination, volume/issue, and date of publication details. And where the final published version is provided on the Research Portal, if citing you are again advised to check the publisher's website for any subsequent corrections.

### **General rights**

Copyright and moral rights for the publications made accessible in the Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognize and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the Research Portal

### **Take down policy**

If you believe that this document breaches copyright please contact [librarypure@kcl.ac.uk](mailto:librarypure@kcl.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.

ISSN 2047-9638  
Issue 4- February 2010

**KING'S**  
*College*  
**LONDON**

**SOCIAL  
CARE  
WORKFORCE  
RESEARCH  
UNIT**

# *Social Care Workforce Periodical*

## **ADULT DAY CARE WORKFORCE IN ENGLAND**

Shereen Hussein, BSc MSc PhD  
February 2010

**ISSUE 4**  
SOCIAL CARE WORKFORCE RESEARCH UNIT  
KING'S COLLEGE LONDON  
Correspondence: Dr Shereen Hussein  
[shereen.hussein@kcl.ac.uk](mailto:shereen.hussein@kcl.ac.uk)

## Executive Summary

Adult day care has traditionally formed an important element of support for those using social care services and their carers. It serves at least two main purposes. The first is to provide an alternative to residential support, enabling people to stay in their communities, families or home. The second is to provide respite for carers, often the children or parents of the people for whom care is being provided. While adult day care centres might have multiple benefits and offer positive outcomes, there have been suggestions that this model of support is building based and fails to promote social inclusion. Since 2009, a number of closures of day care services, or re-provision, have been undertaken across many user groups (particularly people with learning disabilities and mental health problems), with more emphasis being placed on work and ordinary life settings.

At the same time, the last few years have seen the beginning of a 'transformation' of the English social care sector. One of the central elements of this process is a vision of personalised services. It is expected that 1.5 million people could be using personal budgets in the next five years. In a recent study, current users and people speculating on what they might wish for in social care indicated that they might like to commission support from adult day care centres for themselves, through a personal budget, making the most of their freedom to select services as they desire (Bartlett 2009). However, other research has suggested that the viability of adult day care may be threatened when personal budgets are fully implemented (Glendinning et al 2008; Woolham and Benton 2009). This means that adult day care services may be subject to significant change.

From a workforce perspective it is essential to understand the characteristics of day care workers, and whether their profile is any different from that of other workers in the adult care sector. Such intelligence about the workforce could help formulate strategies to facilitate job mobility across the sector if large numbers of day care centres are to close. Alternatively, it could enhance our knowledge of what might be needed to tailor recruitment strategies in case more day care centres or similar facilities are wanted in the near future, in particular areas or by specific groups. The aim of this current issue of *Social Care Workforce Periodical* is to provide insight into this workforce.

The analysis here uses a sample drawn from the National Minimum Data Set for Social Care (NMDS-SC), December 2009 release related to the adult social care sector. Descriptive and multinomial modelling analyses, using 71,861 individual workers' records, have established that the profile of adult day care workers is significantly different from those working in either residential or domiciliary care settings. Judging by the information provided by employers through the NMDS-SC, adult day care workers are relatively older, less ethnically diverse and are more likely to be male than the other two workforces. They appear to hold relatively higher qualification levels and to contain larger proportions of managers and supervisors than the other two settings. Adult day care workers travel considerably shorter distances to work than domiciliary workers but

longer distances than residential workers. The latter may relate to some in-house staff accommodation for residential workers, and the fact that domiciliary work takes place in users' homes, which may be geographically widespread. However, this finding suggests that the adult day care workforce is a more localized workforce than that working in domiciliary care settings.

The adult day care workforce also appears to be more stable, with a significantly larger proportion of workers on full-time and permanent contracts. There is significantly less reliance on agency or temporary workers compared to the residential and domiciliary care workforce.

Detailed analysis of data through the use of a multinomial modelling technique provided insight into the interactions between age and ethnicity of workers. Taking female direct care<sup>1</sup> workers as an example, patterns of working in adult day care settings by age are significantly different for different ethnicities. The probability of working in an adult day care setting appears to increase by age for White and Black workers, reaching a peak at around 35-40 years and then declining with advancing age, indicating a lower prevalence of relatively older White and Black workers in this workforce. However, for Asian workers, the probability of working in adult day care settings increases steadily by age, indicating a larger proportion of older Asian workers in this workforce.

These findings are important in providing policy makers with detailed intelligence in designing suitable job-shifting opportunities within the care sector to avoid the loss of these workers should further day care centres close. The fact that this particular work is attracting and retaining Asian older workers is interesting and may prompt further research to understand how to attract this group to other care settings. Similarly, men are over-represented in adult day care; and it would be useful to understand their motivations, in the hope that such information might be used to attract men to other adult care settings. The fact that the adult day care workforce is significantly more stable, in terms of contractual agreements offering permanent, full time work, highlights the importance of day care centres as a workplace. It is thus crucial to consider opportunities for job shifting within the care sector in case further day care centres close; reduce their level of provision; or are commissioned to provide intensive support for people who might choose not to enter residential care but still wish for some out of home support, or whose carers require out of home respite or short breaks.

---

<sup>1</sup> Those with job roles involving direct care.

## Introduction

Adult day care has traditionally formed an important element of social care, serving at least two main purposes. The first is to provide an alternative to residential care. The second is to provide an out of home short break or respite for carers, often family members. Day centres may offer opportunities for older people or adults with disabilities to socialise, as well as a range of care and treatment activities and events, which can be vital to users' wellbeing. Day centres are usually run or commissioned by local authorities, or taken up by people paying for their own care; smaller numbers are run by local voluntary organizations and the private sector, where day care may be part of a larger care facility (e.g. attached or integrated into a care home). Day centres are usually regarded as a low-cost care management intervention designed to enhance informal carers' wellbeing, increase service utilization, and decrease the use of residential care (Gitlin et al 2006).

While adult day care centres clearly provide multiple benefits as established by Zarit et al (1998) and Cohen-Mansfield and Wirtz (2007) they have been seen by others as failing to produce desired outcomes (for example, Baumgarten et al 2002). They may not promote social inclusion and they may be inflexible in approach. Recently, day centre closures have been reported in many parts of the country (see examples in Picture 1). Such closures are occurring at a time of social care transformation; with a vision of more personalised services that aim to provide users with greater control, freedom of choice and independence.

The transformation of social care has been underway for at least two years and there are around 15,000 individuals already using personal budgets (DH 2009). One of the early findings of the IBSen evaluation was the shift from residential services into supported living among personal budget holders (Glendinning *et al.* 2008; Manthorpe and Stevens, 2009). In a recent study by DEMOS on how people might like to spend a personal budget, 31 percent of those questioned said they would spend it on day care services; this rose to 33 percent amongst older participants (Bartlett, 2009). With an increased number of people on personal budgets, this would seem to indicate a continued demand for day care services; however, the recent closures of many day care centres suggest that such a choice might not be available.

From a workforce perspective it is essential to understand the characteristics of day care workers and whether their profile differs from that of other workers in the adult care sector. Such intelligence about the workforce may assist strategies in facilitating job mobility across the sector if further numbers of day care centres close.

This issue of *Social Care Workforce Periodical* (SCWP) aims to provide a first detailed analysis of the adult day care workforce in England, with the purpose of assisting in the development of workforce strategies and increasing understanding of the size and characteristics of this workforce.

## Picture 1 News cuttings reflecting national day centre closures, December 2009 to February 2010

**BBC NEWS**

### County day centres to be

**A special panel is to be set up to investigate older people.**

Cornwall Council said the single issue review of private sector facilities.

It comes after about 30 pensioners gathered outside County Hall on Tuesday to protest at the possible closure of two charitable day centres.

The panel is due to report back to the full council by November.

Protesters said they want day centres which are run by local

At a meeting on Tuesday, the council will look into all aspects of

### Bridgewater Day Centre in Runcorn faces closure

[Dec 3 2009](#) by Oliver Clay, [Runcorn and Widnes Weekly News](#)

THE fate of a Runcorn care centre will be decided today by a council ballot.

Bridgewater Day Centre in Castlefields will be 'decommissioned' on New Year's Day should Halton Borough councillors approve the closure.

The day centre catered for about 58 adults with physical and sensory disabilities but some have users have already stopped using the centre.

If it closes, services will move to community centres and disabled residents' baths will be modified so they do not need to leave home to wash.

According to a report the closure would reap 'efficiency savings' but some cash would have to be spent on upgrading other buildings. The report also said disabled residents would have more choice and be able to live independently - 'no different to any other residents'.

According to the report the Bridgewater centre promoted dependency because disabled residents expected to use it long-term.

**SwindonAdvertiser**

### Pensioners' anger at day centre closure

7:00pm Sunday 31st January 2010

By Scott McPherson

Swindon Council has been accused of launching a 'vicious attack on the elderly' after they closed a pensioners' day centre on Friday.

Members of the Evergreen Day Centre, in Morris Street, Rodbourne, were left in tears after they were given just two weeks to pack up and leave the centre where most of them have been for the two years it has been running.

The council has said that the centre is no longer cost effective and that all of the 42 elderly users will be moved to another centre in the town.

Former Swindon mayor Ashley Roberts, 84, has said this is another blow for the elderly people and that his time in the centre is the only break for his wife.

He said: "This is a vicious attack on the elderly and is the second place I have had to move from.

"It's awful following on from what happened to Dial-a-Ride.

"This place where I am going to now - is there a guarantee that I will be able to stay there to spend the rest of my days?

This issue of *SCWP* uses a sample of the NMDS-SC December 2009 data set, covering returns from employers up until the end of December 2009. A sample of 71,861 individual workers' records with the age range of 16-75 who worked in the 'adult' care sector were selected for the current analyses.

The first section of this issue describes the characteristics of workers in day care and compares them to those working as domiciliary, residential and community care workers. The second section focuses on the significant variations between the adult day care workforce and both the domiciliary and residential care based groups. The latter part of the analysis uses a multinomial logit model to examine

the proportional variations in relation to different personal and work environment factors.

## Section One: Descriptive analysis

The data show that the adult day care workforce comprises around eight percent of the adult care workforce. Table 1 presents some of the personal characteristics of workers in day care settings compared to those working in residential, domiciliary and community care settings. The findings show that workers in adult day care appear to be older than those working in the other three settings. These differences are significant on the bi-level analysis as shown in Figure 1.

As with the overall care workforce, women constitute the majority of workers, comprising approximately 83 percent of domiciliary, 79 percent of residential, 77 percent of day care and 79 percent of community care workforces. As can be seen, the proportion of female workers appears to be lowest among those working in day care settings.

In terms of ethnicity, Table 1 shows that White workers constitute the majority of adult care workers, comprising approximately 80 percent of day care, 84 percent of community care, 76 percent of domiciliary and 69 percent of residential workforces. The second largest group is Black/Black British workers, who make up approximately 6 percent of residential, 4 percent of day care, 5 percent of domiciliary and 2 percent of community care workers. The descriptive analysis shows that the adult day care workforce appears to be less ethnically diverse than either the residential or domiciliary workforces.

Employers record workers' highest educational qualifications, considering only those relevant to social care. At this point in time the NMDS-SC does not differentiate between workers with other 'non-relevant' qualifications and those whose qualifications are not recorded. Skills for Care is currently in the process of rectifying this miscategorisation, introducing an additional option for employers (for more information see [www.skillsforcare.org.uk](http://www.skillsforcare.org.uk)). According to the current NMDS-SC returns, approximately 16 percent of day care workers have qualifications at level 2/level 3/3+, compared to 24 percent among those working in adult residential settings. However, 6 percent of day care workers have qualifications at level 4/4+ compared to 4 percent in residential, 2 percent in domiciliary, and 10 percent in community care services.

Approximately 4 percent of day care workers are reported to have a disability. This is higher than residential and domiciliary workers, where reported disability is 2 percent. However, 5 percent of community care workers are reported to have some form of disability.

In terms of approximate distance travelled by workers from home to place of employment, as reported by employers, 32 percent of day care workers travel between 2–5 miles. Approximately 21 percent of day care workers travel longer distances, between 5 and 25 miles.



**Table 1 Distribution of adult care workers by different personal characteristics and type of adult care setting**

Personal Characteristics		Adult residential	Adult day care	Adult domiciliary	Adult community care
Age	Median age	45.0	47.0	46.0	46.0
	Mean age	44.0	46.8	45.5	45.8
	Standard deviation	13.0	11.6	11.9	11.0
Gender	Male	13.6	21.2	9.6	20.1
	Female	79.3	77.3	82.7	78.6
	Not known	7.0	1.5	7.7	1.3
Ethnicity	White	68.6	80.1	76.4	84.3
	Mixed	1.2	1.3	1.5	1.6
	Asian or Asian British	4.5	2.1	1.8	3.8
	Black or Black British	5.9	3.5	4.8	2.4
	Other groups	2.4	0.9	1.1	0.7
	Not Known	17.4	12.1	14.3	7.2
Highest qualification level	Entry/level 1	0.2	0.2	0.1	0.0
	Lev2/2+	13.5	7.9	17.2	3.3
	Lev3/3+	10.6	8.3	4.4	5.1
	Lev4/4+	4.2	5.8	2.0	10.1
	Other relevant qualifications	6.8	5.6	3.4	4.1
	Not recorded or no social care qualifications	64.8	72.3	73.0	77.4
Any disability	No	76.4	75.6	77.3	85.4
	Yes	2.1	4.4	2.4	5.1
	Not recorded	21.5	20.0	20.3	9.6
Distance travelled to work	Under 1 mile	21.5	17.6	10.6	10.3
	1 to under 2 miles	12.1	18.7	13.9	14.2
	2 to under 5 miles	16.7	32.2	26.5	26.9
	5 to under 10 miles	8.2	14.2	14.5	20.8
	10 to under 25 miles	3.6	6.4	8.9	14.4
	25 miles or more	0.5	0.7	1.7	1.4
	Not recorded	37.4	10.2	23.9	11.9
Age started in sector <sup>2</sup>	Mean start age	34.2	35.2	36.0	34.2
	Standard deviation	11.7	11.1	10.4	10.1
Total number of workers		35519	5736	20213	10393

The NMDS-SC contains information on the age at which each worker started work in the care sector (provided by employers). As discussed in Issue 3 of *Social Care Workforce Periodical*, there are a number of caveats attached to this

<sup>2</sup> Total number of workers used for this calculation is much smaller than total number of workers in each setting due to the large number of missing values. Specifically, 14,054 records are used for residential care; 1,843 for day care; 7,443 for domiciliary care and 3,986 for community care.

information as well as observed high missing values (Hussein 2010). Nevertheless, such information can provide a proxy of the difference in the average age of starting work in the sector by current setting. The average start age in the adult day care sector is 35 years and there are no apparent differences when compared to other settings, with average ages of 34 for residential, 36 for domiciliary, and 34 years for community care.

In terms of the current age of workers, Figure 1 shows that adult day care workers are significantly older than those working in other settings, particularly workers in residential care settings.

**Figure 1** Box-plot of age of workers in adult care, showing median, quartiles, mean and standard deviation by different care settings

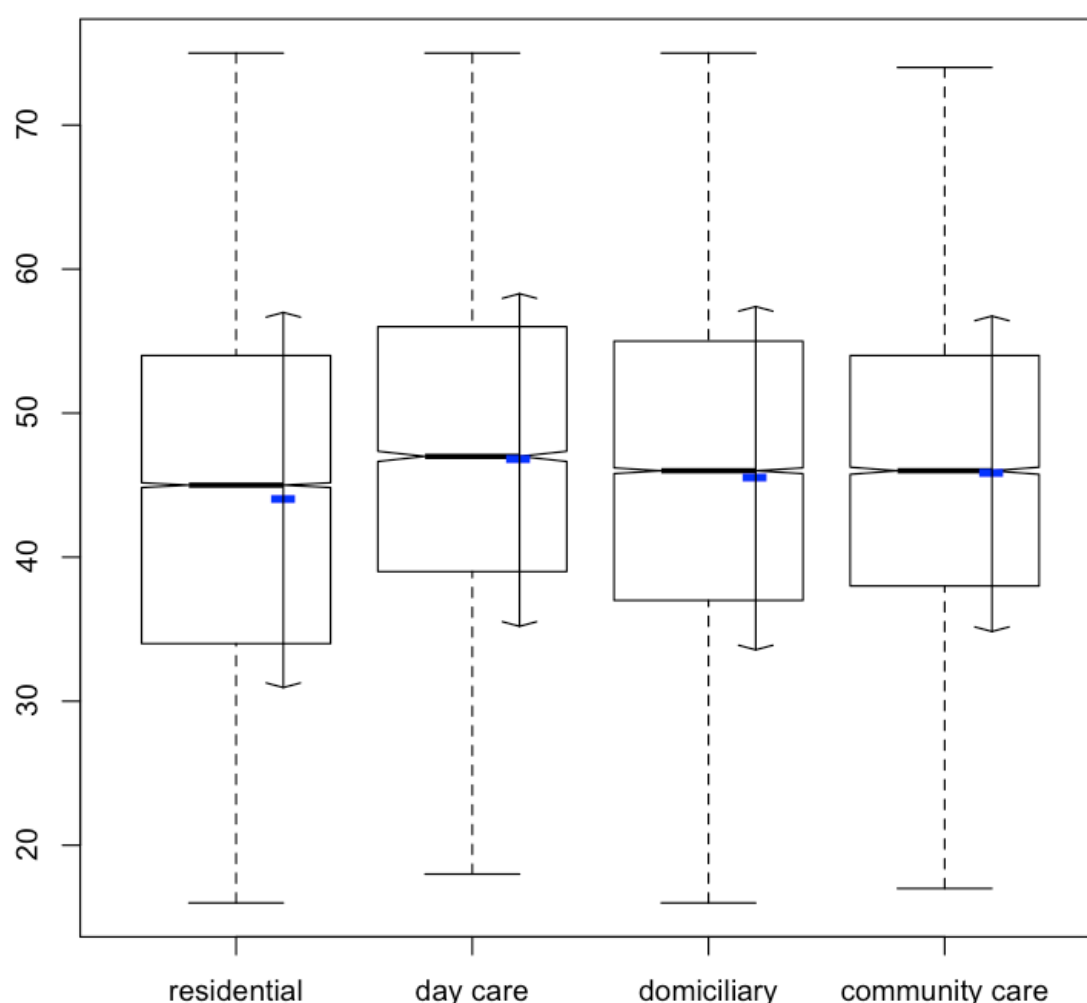


Table 2 shows the distribution of workers according to some work-related factors such as establishment sector and size, as well as job role and contract-related variables.

**Table 2 Distribution of adult workers by some workplace and job role characteristics and type of setting**

Workplace and job role related characteristics		Adult residential	Adult day care	Adult domiciliary	Adult community care
Establishment Type					
	LA	43.0	87.3	64.3	91.0
	Private	40.3	3.7	27.6	1.2
	Voluntary	14.2	8.7	6.3	5.1
	Other	2.5	0.3	1.9	2.7
Establishment Size					
	Micro	5.3	10.2	2.8	10.1
	Small	55.9	46.0	24.3	48.9
	Medium/Large	30.8	23.8	56.6	20.1
	Not Allocated	8.0	20.7	16.2	20.9
Employment status					
	Permanent	76.2	84.3	76.2	83.1
	Temporary	2.3	4.8	2.6	5.0
	Agency	5.4	2.7	3.6	2.5
	Other <sup>3</sup>	0.6	0.6	1.0	0.7
	Not recorded	15.5	7.6	16.6	8.8
Type of contract					
	Full-time	36.4	43.8	26.0	52.6
	Part-time	41.9	42.1	49.9	34.2
	Neither of these	4.5	5.7	7.0	5.9
	Not recorded	17.3	8.5	17.2	7.3
Job role <sup>4</sup>					
	Manager/Supervisor	9.9	15.8	8.0	17.1
	Professional	5.0	2.3	1.1	21.6
	Direct Care	66.6	65.0	87.6	44.0
	Other	18.6	16.9	3.3	17.4
Continuity of working in the sector					
	No breaks exceeding 12 months	27.3	15.7	21.9	20.2
	With breaks exceeding 12 months	1.9	1.2	1.4	1.1
	Not known	70.8	83.1	76.7	78.8
Years in current job					
	Mean	6.03	7.82	6.7	7.51
Total number of workers		35519	5736	20213	10393

The data show that 87 percent of adult day care workers are employed by local authorities, compared to 43 percent of workers in adult residential care, 64 percent in domiciliary care and 91 percent in adult community care. Only 12 percent of adult day care workers are employed by private or voluntary establishments. In terms of establishment size, 46 percent of adult day care

<sup>3</sup> Includes volunteers, students and other.

<sup>4</sup> Grouped as: 1. 'Managers/supervisors': senior management, middle management, first line manager, register manager, supervisor, managers and staff in care-related jobs; 2. 'Direct care': senior care worker, care worker, community support, employment support, advice and advocacy, educational support, technician, other jobs directly involving care; 3. 'Professional': social workers, occupational therapists, registered nurse, allied health professional, qualified teacher; 4. 'Other': administrative staff, ancillary staff, and other job roles not directly involving care.

workers work for small establishments, compared to 56 percent for residential, 24 percent for domiciliary, and 49 percent for community care workers. These differences are visually presented in Figure 2.

**Figure 2 Spine-plot<sup>5</sup> of adult workers across different settings and by sector**

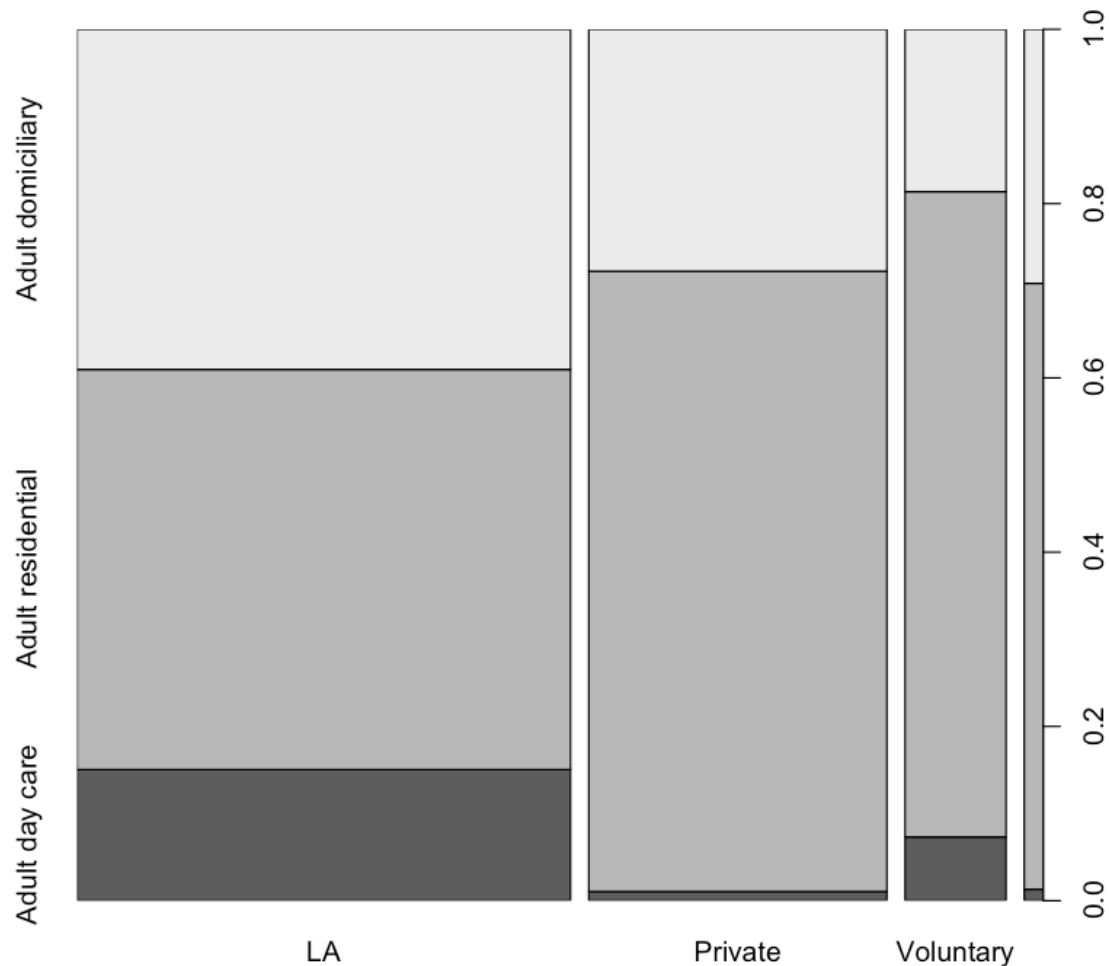


Figure 2 presents a spine-plot of workers across different settings by sector, where the widths and length of each shaded square are relative to the size and proportion of each group. The graph clearly shows the dominance of adult residential care workers within the workforce, as well as the relatively large size of the private and voluntary sectors. The picture is different among adult day care workers. As a whole, they constitute a relatively small proportion of the workforce, and the role of local authorities as employers is most pronounced.

The results presented in Table 2 also show that the vast majority of adult day care workers, approximately 84 percent, are permanent employees. This is compared to 76 percent of residential care workers, 76 percent of adult

<sup>5</sup> Spine plots (spinograms) can be seen as a generalization of stacked bar plots where not the heights but the widths of the bars corresponds to the relative frequencies of  $x$ . The heights of the bars then correspond to the conditional relative frequencies of  $y$  in every  $x$  group (Hummel, 1996).

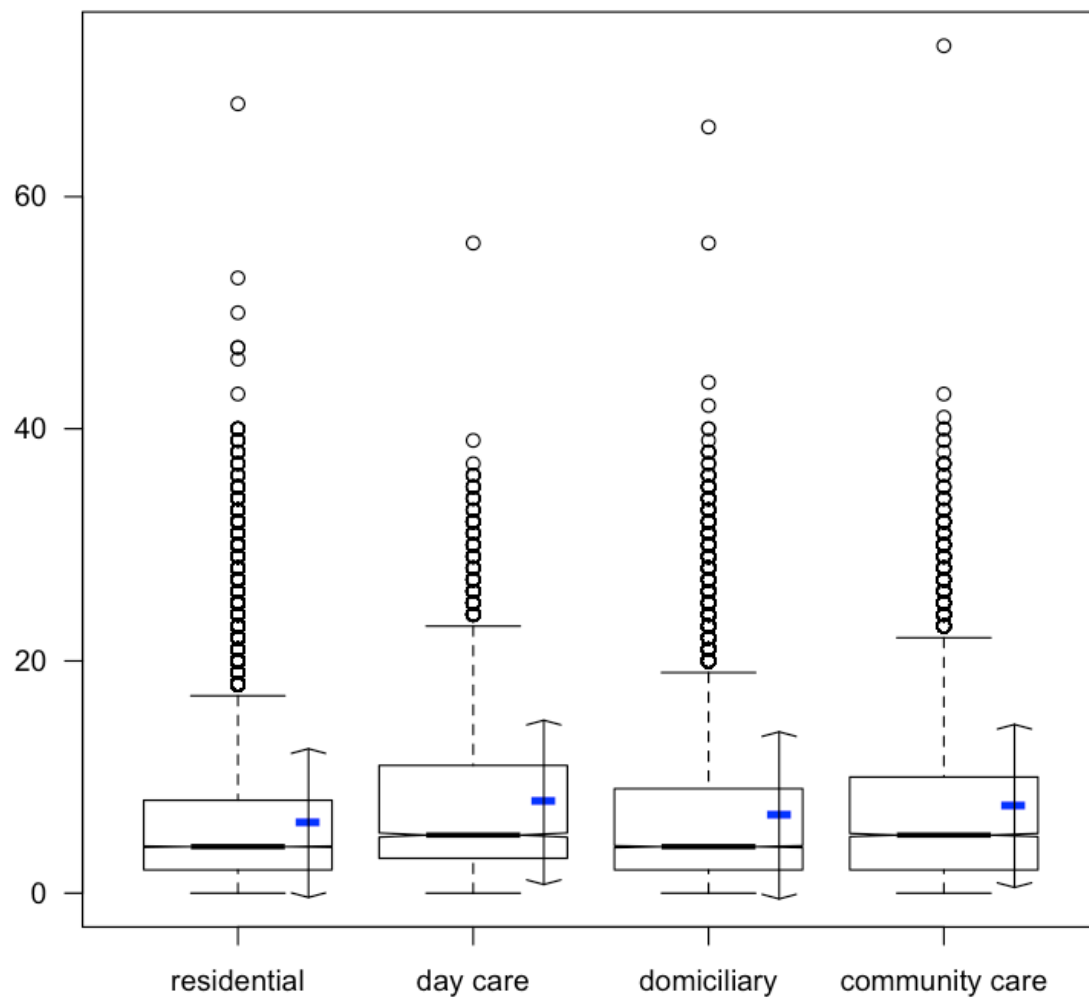
domiciliary workers, and 83 percent of community care workers. Agency or temporary workers constitute less than three percent of day centre workers, similar to the numbers observed in community care settings but lower than those working in residential care settings (5%). Looking at whether workers are full or part time, 44 percent of day care workers are full-time workers compared to 36 percent of residential care workers, 26 percent of adult domiciliary workers, and 53 percent of community care workers. Approximately 42 percent of day care workers are part-time employees, compared to 42 percent of residential, 50 percent of adult domiciliary, and 34 percent of community care workers.

Examining the distribution of job role, around 65 percent of day care workers are direct care workers, compared to 67 percent of residential, 88 percent of adult domiciliary, and 44 percent of community care workers. Although the majority of workers in all four groups undertake direct care, it is clear that the distribution of workers by job role varies widely across the four settings.

The NMDS-SC collects information on continuity of working in the care sector, or how long people have been working in the sector; this information is also provided by employers, and can be used to identify workers who have had long breaks from working in the care sector, of 12 months or more. It is worth noting that such information is missing for a considerable number of workers, although still a minority; with missing values of 11 percent for residential care, 16 percent for day care, 13 percent for domiciliary care and 22 percent for community care. It appears from the information available that day care workers take the least breaks, with only 16 percent taking breaks over 12 months long. This compares to 27 percent of residential care workers, 22 percent of adult domiciliary workers, and 20 percent of community care workers.

Information was also available on the number of years individuals had spent with their current employer. Day care workers are on average the group with largest number of years in the same job, with an average of 7.8 years, compared to 6 years for residential care workers, 6.7 for adult domiciliary workers, and 7.5 for community care workers. Figure 3 presents a box plot of the median, mean and quartiles of the number of years that individuals had been working in their current jobs. It is clear that workers in day care and community care settings spend on average more time with the same employer.

**Figure 3** Box plot of number of years individual workers worked with their current employers



## Section Two: Multivariate analysis

To examine the variations of day care workers' personal and employment characteristics relative to residential and domiciliary settings, a multinomial logistic regression model was used. This type of model serves our purpose of comparing the profile of workers in day care settings simultaneously with the profile of workers in both residential and domiciliary settings (Dobson, 2002). Multinomial regression appears the most appropriate mode of analysis given that the outcome can be considered as working in each of the three settings under study where the categories are nominal (i.e. do not have any logical order). Prior to conducting the analysis, a careful inspection of the data set reveals its suitability for multinomial logistic regression estimation given the nominal nature of the outcome as well as the size of valid records, which is large enough for efficient estimation of this kind of modelling. The estimation of multinomial model was conducted using the maximum likelihood estimation method, which requires a large sample size (using R statistical environment). In addition, it employs simultaneous estimates of multiple equations, which require an even larger sample size. Other tests revealed no perfect association between particular categorical predictors and the outcome variables and no empty cell, or cells with small numbers. Additionally, The Hausman-McFadden method is used to establish the Independence of Irrelevant Alternative (IIA);  $\chi^2=-16.52$ , p-value=0.925, thus the IIA is rejected; meaning that the current multinomial model is significantly different from the null model (Hausman and McFadden, 1984).

The multinomial model is estimated using Equation 1

$$\log_e \left( \frac{P(\text{WorkSetting} = m_j | x_i)}{P(\text{WorkSetting} = m_1 | x_i)} \right) = \alpha_j + \sum_{i=1}^{i=10} \beta_i x_i$$

**Equation 1**

Where:

$\alpha_j$ : constant.

*WorkSetting*: the outcome variable with the 3 levels: day care, residential, and domiciliary for  $j=2,3$ . We use  $j=1$ , day care, as base line for comparing log of odds ratios.

$\beta_i$ ,  $i=1:10$  is the vector of the estimated coefficients.

$x_i$  Identify the  $i^{\text{th}}$  explanatory variable. In this model the following explanatory variables are included: sector, establishment size, employment status, work pattern, job role, age, gender, ethnic group, highest qualifications, and travelling distance.

The predicted probabilities were then used to build visual illustrations of the probabilities of workers in adult care settings relative to the other two settings using a set of equations for the predicted probabilities of the above model, which can be written as following:

$$P(\text{WorkSetting} = m_j | x_i) = \frac{\exp(x_i' \beta_{mj})}{1 + \sum_{j=2}^3 \exp(x_i' \beta_{mj})}$$

**Equation 2**

for  $j=2,3$

And for the base line probabilities:

$$P(\text{WorkSetting} = m_1 | x_i) = \frac{1}{1 + \sum_{j=2}^3 \exp(x_i' \beta_{mj})}$$

**Equation 3**

The results of the model are presented in Table 3. These results present all the independent variables included in the model. The differences in profile are presented for day care workers compared to residential care workers (taking account of domiciliary care workers) and then separately for day care workers compared to domiciliary care staff (while controlling for residential care workers). For each variable the reference category used in the analysis is highlighted. The results present the relative odds ratios, 95% confidence intervals, p-value and significance level (\*<0.05; \*\*<0.005 and \*\*\*<0.001). For ease of illustrating the findings they are presented in two separate sub-sections: the first focuses on how significantly different the profile of day care workers is relative to those working in residential care settings, and the second on the relative difference in profile between day care workers and those in domiciliary settings. Bearing in mind that the multinomial model controls for the third setting in each discussion, in reading Table 3 it should be noted that the reference category of the outcome is 'day care'; thus odds ratios presented are of those in each of the other settings relative to day care. This will mean that if, for example, the odds ratio is less than 1 (for residential vs. day care) it means that workers with this particular characteristic are relatively less likely to work in residential care when compared to day care and therefore they are 'more likely' to work in day care relative to the reference category in consideration. The opposite is true, when the odds ratio is over one, the workers concerned are less likely to be working in day care relative to the other setting being compared.



**Table 3 Results of multinomial logit regression model examining the differences in the profile of adult day care workforce relative to each of the residential and domiciliary care workforces**

Independent Variables in the model	Residential versus Day Care					Domiciliary versus Day Care				
	Odds ratio	Confidence Intervals		p-value	Sig.	Odds ratio	Confidence Intervals		p-value	Sig.
		2.5%	97.5%				2.5%	97.5%		
<b>Sector (ref: local authorities)</b>										
Private	23.10	19.84	26.89	<0.001	***	15.25	13.05	17.82	<0.001	***
Voluntary	2.66	2.37	2.99	<0.001	***	1.20	1.06	1.37	0.005	**
Other	14.17	8.71	23.04	<0.001	***	9.20	5.60	15.12	<0.001	***
<b>Establishment Size (ref: Micro)</b>										
Small	2.74	2.44	3.08	<0.001	***	2.18	1.90	2.50	<0.001	***
Medium/Large	2.65	2.34	3.00	<0.001	***	9.57	8.30	11.03	<0.001	***
Not Allocated	1.61	1.41	1.83	0.000	***	4.35	3.74	5.05	<0.001	***
<b>Employment status (ref: Permanent)</b>										
Temporary	0.69	0.59	0.80	<0.001	***	0.74	0.63	0.87	<0.001	***
Agency	2.05	1.70	2.48	<0.001	***	1.34	1.10	1.63	<0.001	**
Volunteers or students	0.41	0.27	0.62	<0.001	***	1.56	1.03	2.38	0.036	*
Not recorded	1.14	0.99	1.32	0.066		1.62	1.39	1.88	<0.001	***
<b>Work pattern (ref: full time)</b>										
Part-time	1.52	1.42	1.64	<0.001	***	1.96	1.82	2.11	<0.001	***
Neither of these	0.78	0.67	0.91	0.002	**	1.53	1.31	1.78	<0.001	***
Not recorded	0.48	0.42	0.56	<0.001	***	0.84	0.72	0.98	0.023	*
<b>Job role (ref: Manager/Supervisor)</b>										
Professional	1.23	0.99	1.53	0.065		0.33	0.26	0.43	<0.001	***
Direct Care	1.10	1.00	1.22	0.044	*	1.59	1.43	1.76	<0.001	***
Other job roles	1.21	1.07	1.36	0.002	**	0.23	0.20	0.27	<0.001	***

Independent Variables in the model	Residential versus Day Care					Domiciliary versus Day Care				
	Odds ratio	Confidence Intervals		p-value	Sig.	Odds ratio	Confidence Intervals		p-value	Sig.
		2.5%	97.5%				2.5%	97.5%		
<b>AGE</b>	1.00	0.99	1.00	0.039	*	1.01	1.00	1.01	<0.001	***
<b>Gender (ref: Male)</b>										
Female	1.81	1.67	1.96	<0.001	***	1.97	1.80	2.15	<0.001	***
Not recorded	4.48	3.43	5.84	<0.001	***	6.99	5.31	9.19	<0.001	***
<b>Ethnic group (ref: White)</b>										
Mixed	1.00	0.77	1.30	0.988		1.27	0.96	1.66	0.090	
Asian or Asian British	1.53	1.25	1.88	<0.001	***	0.77	0.62	0.97	0.025	*
Black or Black British	1.34	1.14	1.57	<0.001	***	1.29	1.09	1.52	0.003	**
Other groups	2.30	1.70	3.11	<0.001	***	1.04	0.75	1.43	0.827	
Not recorded	0.68	0.62	0.76	<0.001	***	0.42	0.37	0.47	<0.001	***
<b>Highest qualifications (ref: Level2/2+)</b>										
No relevant social care qualifications	0.58	0.52	0.65	<0.001	***	0.59	0.53	0.66	<0.001	***
Entry/1	0.37	0.18	0.77	0.008	**	0.13	0.05	0.32	<0.001	***
Lev3/3+	0.67	0.58	0.78	<0.001	***	0.36	0.30	0.42	<0.001	***
Lev4/4+	0.52	0.44	0.62	<0.001	***	0.34	0.28	0.41	<0.001	***
Other relevant qualifications	0.65	0.55	0.77	<0.001	***	0.35	0.29	0.41	<0.001	***
<b>Travelling distance (ref: &lt;1 Mile)</b>										
1-4 miles	0.52	0.48	0.56	<0.001	***	1.29	1.18	1.41	<0.001	***
5-9 miles	0.55	0.49	0.61	<0.001	***	1.85	1.65	2.08	<0.001	***
10-24 miles	0.65	0.56	0.74	<0.001	***	3.51	3.03	4.06	<0.001	***
25 miles or more	0.71	0.49	1.04	0.079		5.58	3.86	8.07	<0.001	***
Not recorded	1.59	1.40	1.79	<0.001	***	2.23	1.95	2.54	<0.001	***

### Day care workers' profile compared to residential care settings:

Focusing on the profile of the day care workforce relative to residential care settings, the multinomial regression model reveals a number of significant differences. Differences observed in the bivariate analysis (see Tables 1 and 2) in relation to type of contract are significant when taking account of all other variables in the regression model. Adult day care workers are significantly more likely to be permanent staff when compared to residential care workers, while the latter group contains significantly more agency staff but relatively fewer groups of students and/or volunteers. Adult care workers are also significantly more likely to hold full-time positions than residential care staff while the latter include slightly, but significantly, more part-time workers. As illustrated in Figure 2, the vast majority of adult day care workers are employed by local authorities and they work in small and micro teams in comparison to those working in residential care settings.

In terms of personal characteristics, adult day care workers are significantly less ethnically diverse than residential care workers, with particularly high odds that workers are of White ethnicity. For example, the odds ratio of Black workers in residential care vs. adult day care is 1.34,  $p\text{-value} < 0.001$ , and that for Asian workers is 1.53,  $p\text{-value} < 0.001$ . However, they are more diverse in terms of gender, with significantly more men working in day care settings relative to residential care. In terms of age, they are significantly older, by an average of one year. In terms of achieved characteristics, such as qualifications, adult care workers hold relatively higher qualification levels and are significantly more likely to have non-social care qualifications than residential workers. There are significantly larger numbers of managers/supervisors in day services compared to residential care; however, no significant difference is observed in terms of the numbers of 'professional' workers between these two settings. Adult day care workers are significantly more likely to travel relatively longer distances to work in comparison to residential care workers (for example, the odds ratio of residential staff to travel 10-25 miles, relative to less than 1 mile, is 0.65 in comparison to adult day care workers).

### Day care workers' profile compared to domiciliary care workers:

The multinomial model shows similar differences between day care workers' profile and that of domiciliary care workers to those observed in the previous section. The most significant result concerns the type of employer: the vast majority of adult care workers are employed by local authorities in small to micro teams of workers. Other similarities appear in terms of contractual agreements, where adult care workers are significantly more likely to hold permanent positions and to be in full time work than workers in domiciliary settings as well as residential settings. Adult day care workers are also significantly older and significantly more likely to be male and of White ethnicity than those in the other two settings.

However, there are also differences not observed in the comparison with residential care workers. The analysis reveals that adult day care workers are

significantly more likely to travel shorter distances to work and there are significantly higher proportions of Asian workers in day care in comparison to domiciliary care settings.

In terms of job roles, relative to domiciliary care workers, adult care workers are significantly more likely to be managers, supervisors or to hold professional roles than direct care workers. The odds of being agency workers are significantly lower among adult care workers.

### Summary of multinomial analysis

The analysis presented in Table 3 draws a significantly different profile of adult day care workers than those working in either residential or domiciliary care settings. Judging by the information provided by employers through the National Minimum Data Set, adult care workers are relatively older, less ethnically diverse and this workforce contains more men than the other two workforces. They appear to hold higher-level qualifications and to contain proportionately more managers and supervisors than workers in the other two settings.

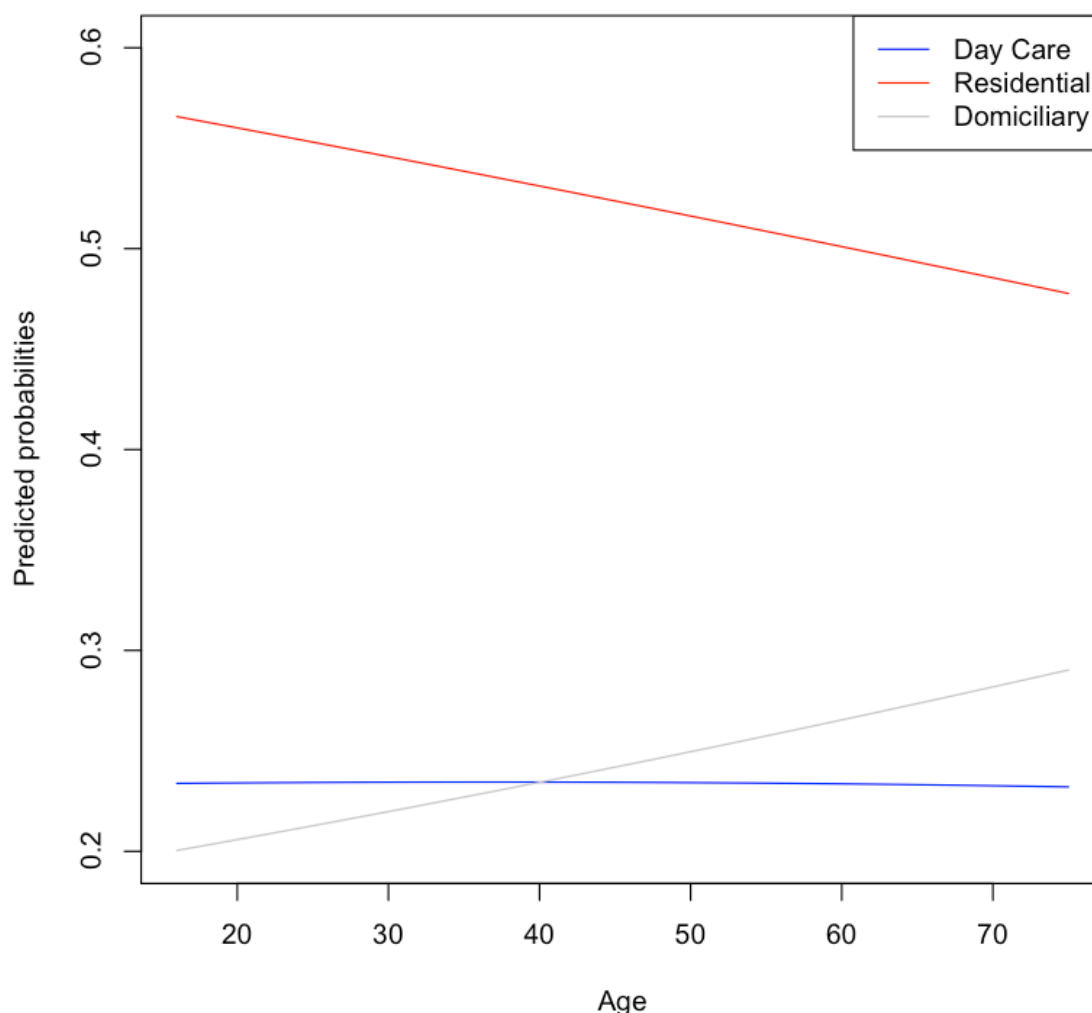
Adult day care workers travel considerably shorter distances to work than domiciliary workers but longer distances than residential workers. Such findings may relate to some in-house staff accommodation for residential workers and the fact that domiciliary work takes place in service users' homes, which may be geographically widespread. However, this finding suggests that the adult day care workforce is a more localized workforce than that working in domiciliary care. This workforce also appears to be more stable, with significantly larger proportions having full-time and permanent contracts and with significantly less reliance on agency workers than the residential and domiciliary care workforces.

The multinomial regression model also provides very detailed and useful predicted probabilities of workers with different characteristics among the three different settings. To illustrate some of these findings, Figure 4 considers the changes in the probability of a worker being in each of the above three settings according to their age, given that other factors are constant. In this particular illustration, we consider the case of a 'typical' worker in day care services relative to residential and domiciliary settings. This 'typical' worker is defined as the person with the most predominant characteristics, namely a white female with average qualification levels.

Although the adult day care workforce is significantly older on 'average', the probabilities of joining each of the three settings are relative to the overall size of the workforce in each of these settings as well as probabilities at different ages, given that other factors such as gender, education and ethnicity remain constant. Figure 4 shows that the probability of working in adult day care remains almost constant across all ages (the blue line), while it declines by age for residential settings and increases for domiciliary settings. This is a very important finding as it highlights the spread of ages among all day care workers and is equally important in considering recruitment strategies or evaluating the effect of day

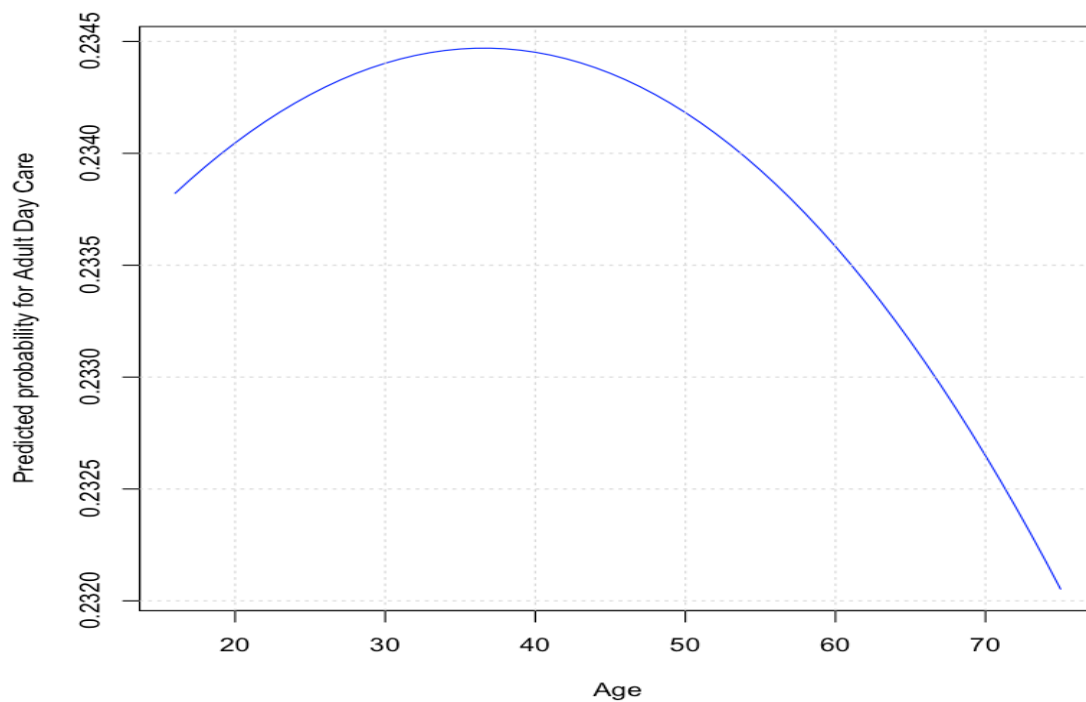
care closures. For example, redundancies due to day care closures are likely to affect workers with a wide range of ages.

**Figure 4 Relative probabilities of ‘a typical’ worker to work in each of the three settings: adult day care, adult residential and adult domiciliary by age; multinomial regression model**

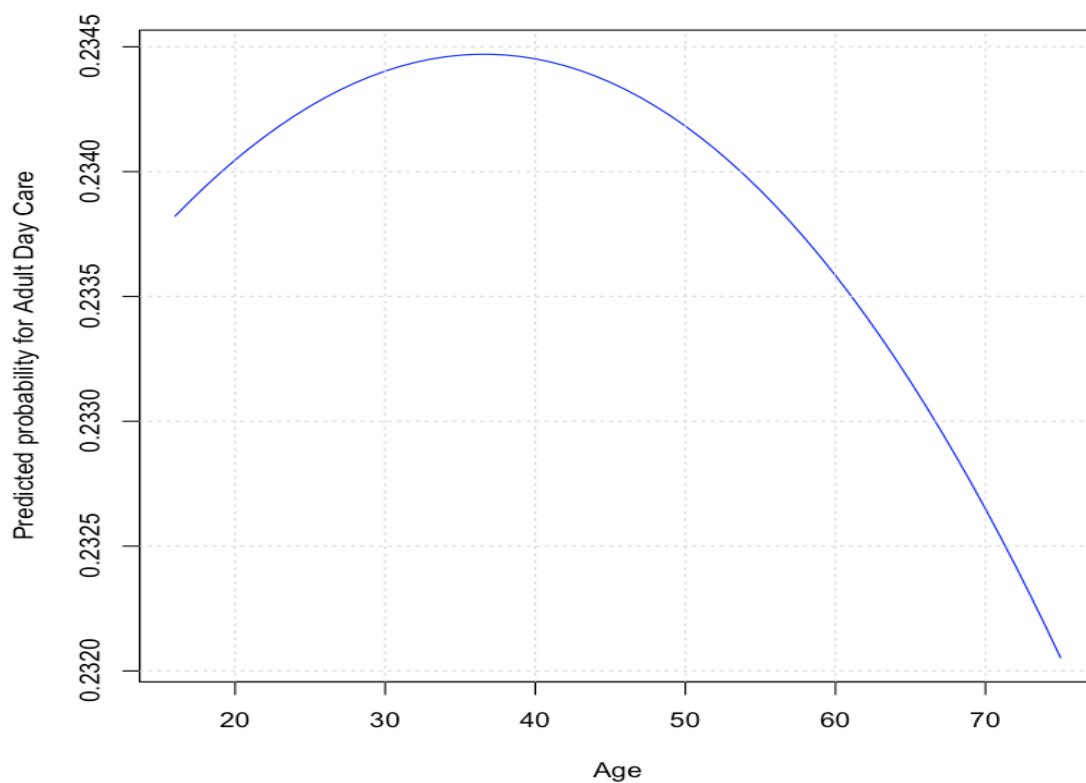


The next three figures present variations in the relative probability of working in adult day care amongst female, direct care workers by age and ethnicity. Figures 5 and 6 show that both White and Black workers have more or less similar distribution, where the probability of working in adult day care starts from a relatively high point (0.23) and increases steadily until it reaches a peak year of age then starts to decline again for older ages. For White workers the peak probability of working in adult day care is around 35 years while such a peak is at a higher age for Black workers, around 40 years.

**Figure 5** Relative probabilities of 'White' female direct care workers to be working in adult day care by age, predicted probabilities calculated from the multinomial regression model



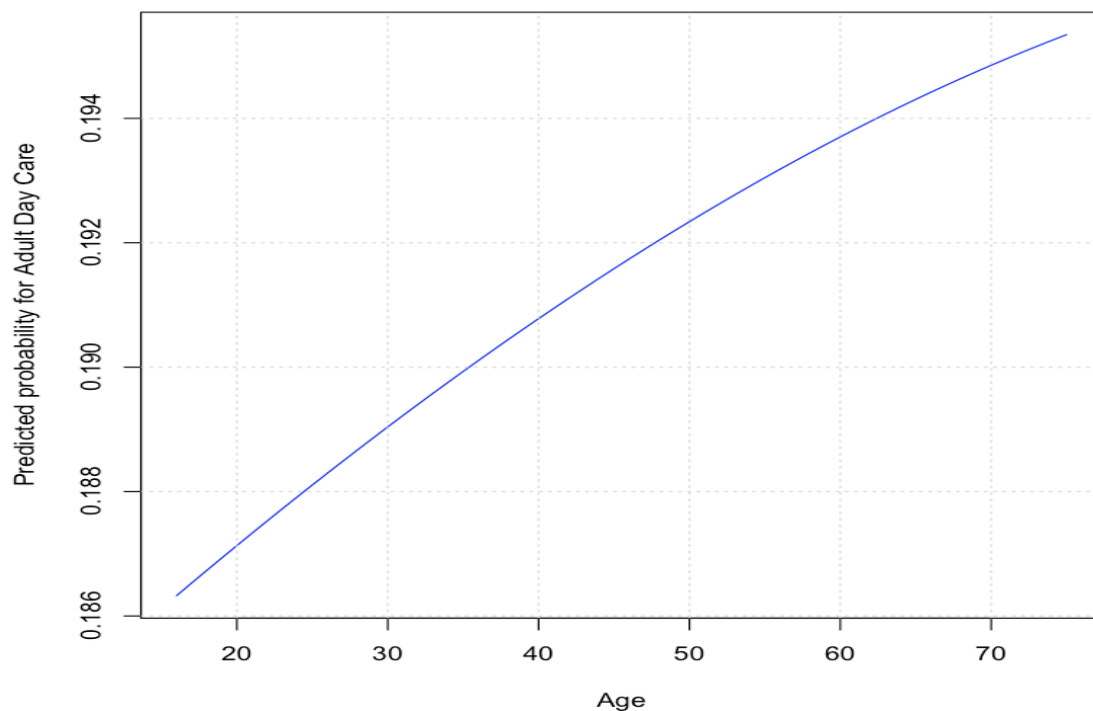
**Figure 6** Relative probabilities of 'Black' female direct care workers to be working in adult day care by age, predicted probabilities calculated from the multinomial regression model



In contrast, Figure 7 shows that the relative probability of Asian female direct-care workers working in adult day care steadily increases by age, starting from a

very low probability of 0.18 at age 18. Figures 5 to 7 provide insight into the dynamic interactions between age and ethnicity in relation to working in adult day care relative to working in other adult care settings. The relative probabilities clearly show a different pattern among Asian female workers, where adult day care work appears to be more attractive as the age of workers increases.

**Figure 7 Relative probabilities of 'Asian' female direct care workers to be working in adult day care by age, predicted probabilities calculated from the multinomial regression model**



## Discussion and Conclusion

In the current context of the government's vision to personalise the social care sector, the number of service users receiving personal budgets is set to increase considerably in the next few years. Recent research shows that people with personal budgets are less likely to continue using adult day care centres (Glendinning et al 2008). At the same time, there appear to be nationwide closures of day centres. From a workforce perspective these trends will, of course, affect those working in adult day care. This current issue of *Social Care Workforce Periodical* has focused on examining the profile of this particular workforce, for the purpose of aiding strategic thinking in relation to retaining this workforce, should the need arise. By understanding the characteristics of this group of workers it will be easier to put in place specific retention strategies suited to particular groups, in order to facilitate job mobility within the sector in case of reductions in size or closure. Such information may also be useful in adopting tailored recruitment drives in case of increased demand for some type of adult day care through personalisation in the next few years; whether this is provided by the local authorities, the voluntary or private sector.

Using a representative sample of around 72,000 adult social care workers drawn from the NMDS-SC, December 2009, the analysis shows that adult day care workforce accounts for around eight percent of all returns related to the adult social care in England. The vast majority of adult day care in England is provided by local authorities (87%), with some contribution through the voluntary and private sectors (9%). Just above half of adult day care workers work in micro to small teams or in small establishments. Adult day care workers appear to have worked for longer in their current job (the highest mean years in current job being 7.8 years) when compared to other workers in the adult care sector; with workers in residential care settings having worked on average in their current job for shorter periods (6 years).

Relative to workers in other adult care settings, adult day care workers are older; they have the highest median age of 47 years, and they appear to have taken the fewest long-term breaks (over 12 months); however, the latter should be treated as a tentative finding only because of the large number of missing values or data.

To examine the profile of adult day care workers in comparison to other adult care workers, namely those working in residential and domiciliary settings, this study used a multinomial regression model. Multinomial regression appeared the most appropriate, given that the outcome can be considered as working in each of the three settings under consideration where the categories are nominal, and careful inspection of data set has confirmed its suitability. The results of the multinomial regression model show some significant variations between the adult day care workforce and both the residential care and domiciliary care workforces.



Compared to residential care workers, adult day care workers are significantly more likely to be permanent staff, employed on a full-time basis. On the personal level, adult day care workers are significantly less ethnically diverse than residential care workers. However, they are significantly more diverse in terms of gender, with larger proportions of men. Adult day care workers are also significantly older and they hold higher educational qualifications than residential care workers. In terms of job roles, the adult day care workforce contains significantly more managers and supervisors, and fewer direct care workers, than residential care settings, mainly due to the different nature of work in each of these two settings. Adult day care workers also seem to travel significantly longer distances to work than residential care workers.

Comparing the adult day care workforce to that of domiciliary care settings (while controlling for residential care), another set of findings emerges. Similar to the observations above, adult day care workers are significantly more likely to be permanent workers (with significantly less reliance on agency or temporary workers) than those in domiciliary care settings; they are also significantly more likely to work in full-time positions. They are significantly older, and more likely to comprise White workers and men than domiciliary care workers. However, significantly larger proportions of Asian workers are working in adult day care than domiciliary care settings. Again, managerial and supervisory roles are significantly more prevalent in adult day care than in domiciliary care.

The analysis draws a significantly different profile of adult day care workers than those working in residential or domiciliary care settings. Judging by the information provided by employers through the National Minimum Data Set, adult day care workers are relatively older, less ethnically diverse and contain more men than the other two workforces. They appear to hold higher qualifications and to contain larger proportions of managers and supervisors than the workforce in the other two settings. Adult day care workers travel considerably shorter distances to work than domiciliary workers, but longer distances than residential workers. Such findings may relate to some in-house staff accommodation for residential workers and the fact that domiciliary work takes place in service users' homes which may be geographically wide spread. However, this finding suggests that the adult day care workforce is a more localized workforce than that in domiciliary care settings. This workforce also appears to be more stable, with significantly larger proportions on full-time and permanent contracts and significantly less reliance on agency workers relative to the residential care and domiciliary care workforces.

Detailed analysis of data through the use of the multinomial modelling technique provided insight into the interactions between age and ethnicity of workers. Taking female direct care workers as an example, patterns of working in adult day care settings by age are significantly different for different ethnicities. The probabilities of working in adult day care settings appear to increase by age for White and Black workers until they reach a peak at around 35-40 years; they then decline, indicating a lower incidence of relatively older White and Black workers in this workforce. However, for Asian workers, the probability of

working in adult day care settings increases steadily with age, indicating a larger proportion of older Asian workers in this workforce.

These findings are important in providing policy makers with detailed intelligence if they need to design redeployment within the sector to avoid the loss of this workforce in case of further day care centre reduction or closure. The fact that this particular work is attracting Asian older workers is interesting and may need further research to understand what attracts this group to this work and whether it might be used as a model for other social care settings. Similarly, men are over-represented in adult day care. It would be useful to understand their motivations and experiences and whether such information could be used to attract men to other adult care settings.

## References

Bartlett, J. (2009) *At your service, navigating the future market in health and social care*. DEMOS, London.

Baumgarten, M., Lebel, M., Laprise, H. Leclerc, C. and Quinn, C. (2002) Adult Day Care for the Frail Elderly: Outcomes, Satisfaction, and Cost. *Journal of Aging and Health*, 14(2): 237-259.

Cohen-Mansfield, J. and Wirtz, P. (2007) Characteristics of adult day care participants who enter a nursing home. *Psychology and Aging*. 22(2), 354-360.

Department of Health (2009) Putting People First: Transforming Adult Social Care. HM Government: London.

Dobson (2002) *An introduction to generalized linear models*, Texts in Statistical Science. Chapman and Hall/CRC: Florida.

Gitlin, L., Reeve, K., Dennis, M., Mathieu, E. and Hauck, W. (2006) Enhancing quality of life of families who use adult day services: Short- and long-term effects of the adult day services plus program. *Gerontologist*, 46(5):630-639.

Glendinning, C., Challis, D., Fernandez, J., Jacobs, S., Jones, K., Knapp, M., Manthorpe, J., Moran, N., Netten, A., Stevens, M. and Wilberforce, M. (2008) *Evaluation of the Individual Budgets Pilot Programme: Final Report*. York: Social Policy Research Unit, University of York. <http://php.york.ac.uk/inst/spru/pubs/1119/> (accessed 29 January 2010).

Hausman, J. and McFadden, D (1984) Specification Tests for the Multinomial Logit Model. *Econometrica*, 52(5):1219-1240.

Hummel J (1996). "Linked Bar Charts: Analysing Categorical Data Graphically." *Computational Statistics*, 11, 23-33.

Hussein (2010) The role of young workers (18-26) in the English care sector. *Social Care Workforce Periodical*, Issue 3, January 2009. Social Care Workforce Research Unit, King's College London. <http://www.kcl.ac.uk/schools/sspp/interdisciplinary/scwru/scwperiodical.html>

Manthorpe, J. and Stevens, M. (2009) Increasing Care Options in the Countryside: Developing an Understanding of the Potential Impact of Personalization for Social Work with Rural Older People, *British Journal of Social Work*, Advance Access published online on March 27 2009, doi:10.1093/bjsw/bcp038.

Woolham, J. and Benton, C. (2009) *Your money and your life? Self directed support and personal budgets in Northamptonshire: an evaluation of impact*

*and outcomes on people who use Adult Social Services*, Northampton, Northamptonshire County Council.

Zarit, S., Stephens, M., Townsend, A. and Greene, R. (1998) Stress Reduction for Family Caregivers: Effects of Adult Day Care Use. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 53B(5):S267-S277

## Appendix

### Box A.1: About NMDS-SC

The NMDS-SC is the first attempt to gather standardized workforce information for the social care sector. It is developed, run and supported by Skills for Care and aims to gather a 'minimum' set of information about services and staff across all service user groups and sectors within the social care sector in England. The NMDS-SC was launched in October 2005, and the online version in July 2007; since then there has been a remarkable increase in the number of employers completing the national dataset.

Two data sets are collected from employers. The first gives information on the establishment and service(s) provided as well as total numbers of staff working in different job roles. The second data set is also completed by employers; however, it collects information about individual staff members. Skills for Care recommends that employers advise their staff they will be providing data through the completion of the NMDS-SC questionnaires. No written consent from individual members of staff is required, however, ethnicity and disability are considered under the Data Protection Act to be '*sensitive personal data*', thus it is recommended that consent for passing on these two items needs to be explicit. For further details on NMDS-SC please visit <http://www.nmds-sc-online.org.uk/>

The NMDS-SC has provided the sector with a unique data set, providing information on a number of the workforce characteristics. However, it is important to highlight the emerging nature of the NMDS-SC, mainly due to the fact that data have not been completed by '*all*' adult social care employers in England, at this stage. Therefore, some of the findings may be under- or over-represented as a result of this. It is also equally important to bear in mind that data are completed by employers and not workers. This may also prompt some technical considerations when interpreting the findings. *Social Care Workforce Periodical* will address such considerations in relevant discussions of findings.

## About

The *Social Care Workforce Periodical* (SCWP) is a regular web-based publication, which is conducted and published by the Social Care Workforce Research Unit, King's College London. SCWP aims to provide timely and up-to-date information on the social care workforce in England. In each issue, one aspect of the workforce is investigated through the analysis of emerging quantitative workforce data to provide evidence-based information that relates specifically to the social care workforce in England. The purpose is to share emerging findings with the social care sector to help improve workforce intelligence. Such updates are useful in highlighting specific issues for further analysis and to inform workforce policy. The first few issues of *Social Care Workforce Periodical* will provide in-depth analyses of the latest versions of the National Minimum Data Set in Social Care (NMDS-SC). We would welcome any suggestions on topics for inclusion in future issues. For further information and suggestions please contact Dr Shereen Hussein; email: [shereen.hussein@kcl.ac.uk](mailto:shereen.hussein@kcl.ac.uk); phone: + (44) (0) 207848 1669.

## Acknowledgments

The author is most grateful to Skills for Care for providing the latest NMDS-SC data files. Particular thanks are due to David Griffiths, Christine Eborall and Sarah Woodrow for their support and assistance, and to colleagues at the Social Care Workforce Research Unit. This work is funded under the Department of Health Policy Research Programme support for the Social Care Workforce Research Unit at King's College London. The views expressed in this report are those of the author alone and should not necessarily be interpreted as those of the Department of Health or Skills for Care.